

## REMARKS

This communication is a timely response to a communication having a notification date of December 12, 2008. Claims 17 and 20-30 were rejected. In response independent claims 17, 23 and 27 are herein amended. Applicants respectfully request reconsideration of the application and the allowance of claims 17 and 20-30.

In Applicants' last communication, the Applicants brought to the Examiner's attention the fact that information disclosure statements previously filed by Applicants on 04-13-04 and 07-06-05 were placed in the application file without being considered. Applicants again request that the information in those statements be officially made of record and acknowledgement of each reference made by the examiner.

This application is a continuation of a divisional application from a parent application Serial No. 08/708,296 that issued as U.S. Patent 5,776,798. In the parent application, an election between three separate and distinct inventions was required. Because this application is directed to a separately recognized invention, the comments made herein are not intended to limit the independent invention of the parent application.

### **35 U.S.C. 103(a) Rejection**

Claims 17 and 20-30 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tuttle et al. (U.S. Patent 5,612,513). Tuttle et al. teach away from the present invention. Claims 17, 23 and 27 are amended to further distinguish by reciting an "interconnect substrate being a ceramic substrate or a printed circuit board substrate". Tuttle et al. teach away from the use of a rigid substrate such as ceramic or a printed circuit board. As a result, the Tuttle et al.

package does not have “a top surface of the encapsulant which has a surface deviation of less than 0.13 millimeters across a surface of the continuous encapsulant”. For example, in the second sentence of the Tuttle Abstract there is described “a flexible substrate is formed with a plurality of electrical circuits”. In each of the Tuttle embodiments at Col. 4, lines 8-10, Col. 6, lines 6-8, Col. 7, lines 3-5, and Col. 8, lines 20-21 the substrate is described as being flexible and made of a flexible material. At Col. 6, line 8, the flexible substrate material is stated “to allow the final product to remain flexible”. For the final product to remain flexible, the encapsulant must also be flexible. Additionally, Tuttle et al. discloses at Col. 6, lines 55-57 that “sufficient encapsulant 60 is utilized to give each enclosed circuit 42 a substantially flat top surface” (emphasis added). The Tuttle et al. product is silent with respect to the surface planarity across the surface of the encapsulant. At Col. 6, lines 59-61, after Tuttle et al. states that each enclosed circuit is preferably flat, Tuttle et al. state “because of the flexible nature of the substrate as well as the encapsulant, some flexing can still be possible”. Due to the final Tuttle et al. product being flexible, a surface variation will exist between each enclosed circuit because of the variation of having enclosed circuits in some portions of the package and no enclosed circuits in other portions. At Col. 1, line 66 through Col. 2, line 1, Tuttle et al. describe using enough encapsulant over components of unequal heights so that each circuit is flat. Tuttle et al. does not describe “a top surface of the encapsulant which has a surface deviation of less than 0.13 millimeters across a surface of the continuous encapsulant”.

The immediate past Office Action acknowledges on page three that Tuttle “does not disclose wherein overmolding produces a top surface of the encapsulant which has a surface deviation of less than 0.13 millimeters”. As evidence to rebut the position that it was obvious to modify Tuttle to employ such a surface deviation, Applicants are submitting an attached affidavit from Michael McShane,

an experienced technologist in microelectronics packaging and an IEEE Fellow. Applicants request the careful consideration of this evidence.

Because Tuttle et al. teach a flexible final product using a flexible material substrate, only the individual enclosed circuits will have a relatively flat surface. In the Tuttle et al. package the encapsulated components and the encapsulated areas having no components will possess different physical properties which, due to the package flexibility, will result in surface deviation. The surface deviation causes attendant problems for marking and place and route equipment that handles the package. In contrast, the pending method claims recite a substrate having rigid properties. Therefore, the rejected claims, as amended herein, are not derived from the Tuttle et al. reference by using the principle of discovering an optimum range. The rule of law from the CCPA decision *In re Aller*, 105 USPQ 233, that is relied upon to form the rejection basis is distinguishable from the recited claim differences between the Tuttle et al. patent and the rejected claims, as amended. The differences between the Tuttle et al. package and the pending amended claims are not a difference in a range. Further, the CCPA decision in the *In re Aller* case involved a prior art teaching of a specific temperature and a specific solution concentration. The Tuttle et al. reference at Col. 6, lines 55-61 has no such specificity. Tuttle et al. states that sufficient encapsulant should be used to completely encapsulate each circuit and this makes a substantially flat circuit. This is an amount of encapsulant that will vary between products of differing heights of the circuitry. Additionally, unlike the *In re Aller* facts, the criticality of the claimed "surface deviation of less than 0.13 millimeters across a surface of the continuous encapsulant" has been shown by the evidence proffered in the attached declaration regarding this claim recital's importance for equipment handling and marking. In contrast, in the *In re Aller* case, the Court stated that no criticality of a claimed range was shown by the Applicant. Applicants respectfully submit that

the facts presented in this application significantly differ from the holding of *In re Aller*.

### **Conclusion**

Applicants thank the Examiner for the continued time and effort spent on the examination of this application. Applicants earnestly request the reconsideration of pending claims 17 and 20-30, as amended herein with the attached Declaration evidence and the allowance of pending claims 17 and 20-30.

Respectfully submitted,

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